

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

A personal interview is respectfully requested in order to discuss this application and the points set forth below.

A Terminal Disclaimer is attached to overcome the obviousness-type double patenting rejection of claims 7 and 9.

An Information Disclosure Statement is submitted herewith.

Claims 1 and 11 have been amended to recite the meaning of the well-known acronym SSB, and claims 6, 7 and 15 have been amended to recite the meaning of LPF. a document is attached which discusses the meaning of SSB. With these amendments, it is believed that the objection to these claims on these points is overcome and should be withdrawn.

The 35 USC 112, first paragraph, rejection and the objection to the drawings are overcome by the deletion from claims 1 and 7 of the language “with the sign of the odd-numbered real coefficient wavelet filters inverted.”

Claim 12 has been amended to correct a typographical error by changing the word “know” to “known.”

Claim 1 has been amended to incorporate the discrete cosine and sine transformers from claims 2 and 3. Claims 7, 11, 14 and 15 have been similarly amended to incorporate discrete cosine and sine transformers. Claim 6 has been amended to recite that the first and second LPFs output an in-phase signal and an orthogonal signal respectively.

Claims 2-4 and 8-10 have been amended to be consistent with the changes to the above claims and for cosmetic reasons.

Claims 1-4 and 7-10 were rejected under 35 USC 103(a) as unpatentable over Sandberg et al. (US 5 715 280) in view of Xie et al., further in view of Kingsbury. Claims 6 and 13 were rejected under 35 USC 103(a) as unpatentable over Kjeldsen et al. (US 2003/231714) in view of Xie et al. Claims 11 and 14-16 were rejected under 35 USC 103(a) as unpatentable over Sandberg et al. (US 5 715 280) in view of Xie et al. Claim 12 was rejected under 35 USC 103(a) as unpatentable over Sandberg et al. (US 5 715 280) in view of Xie et al., further in view of Smart et al. (US 2002/041637).

Regarding the rejection of claims 1-4 and 7-10, the office action relied on Kingsbury for a teaching of the subject matter which was deleted from these claims in order to overcome the 35 USC 112, first paragraph, rejection and the objection to the drawings. Thus, Kingsbury is deemed to be non-relevant to the amended claims.

The office action relies on Xie as disclosing in Fig. 5 a bit buffer and encoder corresponding to a signal point mapping unit and a serial-to-parallel converter and a parallel-to-serial converter corresponding to a modulator for performing SSB modulation. However, the single 2M point IFPT of Wie does not teach or suggest the first and second inverse wavelet transformers of the Applicants' claim 1. Sandberg discloses a pair of transformers that correspond to first and second inverse wavelet transformers. But claim 1 has been amended to recite that the first inverse wavelet transformer includes a discrete cosine transformer for inputting the parallel data from the serial-to-parallel converter, and the second inverse wavelet transformer includes a discrete sine transformer for inputting the parallel data from the serial-to-

parallel converter. The office action notes that Xie discloses on page 188 a cosine-modulated filter. However, the Applicants note that both Xie and Sandberg lack any teaching or suggestion of a discrete sine transformer and furthermore lack any teaching or suggestion of the discrete cosine and sine transformers.

Thus, it is submitted that amended claim 1 is allowable over the teachings of the applied references, whether considered alone or in combination . Claims 7, 11, 14 and 15 recite subject matter that is allowable over the applied art for similar reason that claim 1 distinguishes thereover.

Turning now to the rejection of independent claim 6, Fig. 6 of Kjeldsen discloses a single anti-aliasing filter which outputs to the A?D converter, while Fig. 4 of Xie discloses on page 188 the use of cosine-modulated filter banks. However, the Applicants' claim 6 recites a first LPF and a second LPF for removing an unwanted signal outside the band of a baseband signal output from each of said first and said second multipliers and outputting an in-phase signal and an orthogonal signal respectively. Neither Kjeldsen nor Xie discloses such use of first and second LPFs. Because Kjeldsen employs only a single LPF, no switching is needed. The present claimed invention avoids the need for nTs switching through the use of first and second LPFS.

Thus, it is submitted that amended claim 6 is allowable over the teachings of the applied references, whether considered alone or in combination.

In view of the above, it is submitted that independent claims 1, 6, 7, 11, 14 and 15, and all claims dependent therefrom, are allowable over the individual or combined teachings of the applied art. Moreover, all formal objections and rejection have been overcome.

Accordingly, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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JEL/DWW/att

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